

WHAT IS CLAIMED IS:

1. A hermetic package, comprising:

an bottom portion;

a top portion to mate over said bottom portion at a seam to form a package;

a fiber feed through;

an optical fiber having a first portion inside said package and a second portion outside said package extending through said feed through;

a laser weld joint at said seam; and

a reflowed glass solder inside of said feed through coaxial with said fiber.

2. A hermetic package as recited in claim 1 wherein said feed through comprises:

a top half formed with said top portion; and

a bottom half formed with said bottom portion.

3. A hermetic package as recited in claim 2 wherein said top portion and said bottom portion comprise Kovar.

4. A hermetic package as recited in claim 2 wherein said hermetic package encases an optoelectronic device.

5. A hermetic package as recited in claim 1 wherein said seam is approximately in a plane of said optical fiber.

6. A hermetic package as recited in claim 1 wherein said reflowed glass solder is reflowed by one of said laser heating, induction heating, and resistive heating.

7. A method for hermetically sealing a package, comprising:

forming a top of said package;

forming a bottom of said package;

placing an assembled pill including an optical fiber into said bottom, said optical fiber extending outward from said bottom;

mating said top of said package to said bottom of said package at a seam;

placing a glass solder ring coaxial with said fiber;

laser welding along said seam; and

reflowing said solder ring.

8. A method for hermetically sealing a package as recited in claim 7, further comprising, forming said top and said bottom from Kovar.

9. A method for hermetically sealing a package as recited in claim 7, further comprising, forming fiber feed through portions in each of said top and bottom to form a fiber feed through after said mating.

10. A method for hermetically sealing a package as recited in claim 9, further comprising:

using a same laser to laser weld said seam and to reflow said glass solder ring.

11. A method for hermetically sealing a package as recited in claim 9, further comprising:

placing said solder within said fiber feed through.

12. A method for hermetically sealing a package as recited in claim 9, further comprising reflowing said glass solder ring with resistive heating.

13. A hermetically sealed optoelectronic package, comprising:

a bottom for said package;

a top for said package to mate over said bottom at a seam;

a fiber feed through;

optoelectronic components in said package;

an optical fiber having a first portion aligned with said components in said package and a second portion extending outside said package through said fiber feed through;

a laser weld joint said seam; and

a reflowed glass solder inside of said fiber feed through coaxial with said

fiber.

14. A hermetically sealed optoelectronic package, as recited in claim 13 wherein said fiber feed through is formed integrally with said top and said bottom.
15. A hermetically sealed optoelectronic package, as recited in claim 13 wherein said top and said bottom comprises a metallic alloy.
16. A hermetically sealed optoelectronic package, as recited in claim 15 wherein said metallic alloy comprises Kovar.
17. A hermetically sealed optoelectronic package, as recited in claim 14 wherein said seam comprises a laser weld.
18. A hermetically sealed optoelectronic package, as recited in claim 17 wherein said glass ring is reflowed by laser heating.
19. A hermetically sealed optoelectronic package, as recited in claim 17 wherein said glass ring is reflowed by one of resistive heating and induction heating.
20. A hermetically sealed optoelectronic package, as recited in claim 13 wherein said seam is approximately in a plane of said optical fiber.
21. A hermetic package, comprising:

a package bottom having a first generally semi-cylindrical snout;
an optical fiber having a first portion inside said package bottom and a
second portion outside said package bottom through said semi-cylindrical snout;
a package top having a second generally semi-cylindrical snout to mate
over said package bottom at a seam to form a package having a cylindrical
snout;
a laser weld joint at said seam;
solder to seal between said snout and said optical fiber;
a furcation tube on said second portion of said optical fiber;
a coupling tube around said cylindrical snout and said furcation tube; and
an epoxy to seal and area inside said coupling tube.

22. A hermetic package as recited in claim 21 wherein said coupling tube
comprises an opening for introducing said epoxy.

23. A hermetic package as recited in claim 22 further comprising a strain relief
boot over said coupling tube and said furcation tube.

24. A hermetic package as recited in claim 21 wherein said solder comprises a
glass solder.

25. A hermetic package as recited in claim 24 wherein said fiber comprises one
of a 250, 400, and 900 micron fiber.

26. A hermetic package sealing method, comprising:
 - forming a top of said package;
 - forming a bottom of said package;
 - positioning an optical fiber extending outward from said bottom of said package through a snout;
 - mating said top of said package to said bottom of said package at a seam;
 - laser welding along said seam;
 - solder sealing said snout;
 - positioning a furcation tube around said fiber;
 - positioning a coupling tube having a fill hole around said snout and said furcation tube; and
 - introducing epoxy inside said coupling tube through said fill hole.
27. A hermetic package sealing method as recited in claim 26, further comprising:
 - positioning a strain relief boot around said coupling tube and said furcation tube.
28. A hermetic package sealing method as recited in claim 26, further comprising:
 - reflowing said solder by one of laser heating, resistive heating, and induction heating.

29. A hermetic package, comprising:

a package bottom having a first generally semi-circular notch;
an optical fiber having a first portion inside said package bottom and a second portion outside said package bottom through said semi-circular notch;
a package top having a second generally semi-circular notch to mate over said package bottom at a seam to form a package having a circular opening;
a generally cylindrical snout having a lip to fit inside said circular opening;
a laser weld joint at said seam and around said circular opening;
a first opening in said snout to solder seal between said snout and said optical fiber;
a furcation tube around said optical fiber extending into said snout; and
a second opening in said snout to introduce epoxy into an area inside said snout.

30. A hermetic package as recited in claim 29, further comprising:

a strain relief boot over said snout and said furcation tube.

31. A hermetic package as recited in claim 29 wherein said solder is one of glass solder and metal alloy solder.

32. A hermetic package sealing method, comprising:

forming a top of said package;

forming a bottom of said package;
positioning an optical fiber extending outward from said bottom of said package through an opening;
mating said top of said package to said bottom of said package at a seam;
positioning a snout extending from said opening;
laser welding along said seam and along said snout and said opening;
providing a first hole in said snout for solder sealing said snout;
positioning a furcation tube around said fiber extending into said snout;
providing a second hole in said snout for introducing epoxy inside said snout.

33. A hermetic package sealing method as recited in claim 32, further comprising:

positioning a strain relief boot around said snout and said furcation tube.

34. A hermetic package sealing method as recited in claim 33, further comprising:

reflowing said solder by one of laser heating, induction heating, and resistive heating.